

What is claimed is:

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1. A fluid pressure regulator assembly including a body having first, second and third surfaces, a first passageway extending from a first port provided in the first surface to a second port provided in the third surface, a second passageway extending from a third port provided in the third surface to a fourth port provided in the second surface, and a pressure regulator including a fifth control port for receiving a fluid pressure signal, a sixth port in fluid communication with the second port and a seventh port in fluid communication with the third port to control the pressure of fluid flowing from the second port to the third port.
2. The apparatus of claim 1 wherein the body is generally right rectangular prism shaped.
3. The apparatus of claim 1 wherein the first passageway includes a generally right angle turn.
4. The apparatus of claim 3 wherein the second passageway includes a generally right angle turn.
5. The apparatus of claim 1 wherein the second passageway includes a generally right angle turn.
6. The apparatus of claim 1 further including a bypass valve, the body including a housing for the bypass valve, a third passageway extending from the first passageway to the housing, a fourth passageway extending from the housing to the second passageway, the bypass valve controlling flow from the first passageway through the third passageway and the fourth passageway to the second passageway in response to a bypass control signal coupled to the bypass valve.
7. The apparatus of claim 6 wherein the body includes a fifth passageway extending from the housing to one of the first, second and third surfaces.
8. The apparatus of claim 6 wherein the bypass valve includes a movable valve member and a seat, the movable member and seat having a first relative orientation to close the bypass valve and a second relative orientation to open the bypass valve, the apparatus further including an indicator coupled to the movable member and visible when the movable member is in one of the first and second orientations to indicate the condition of the bypass valve.

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13

9. The apparatus of claim 1 further including a first component for providing a flow of fluid to the fluid pressure regulator assembly, and a second component for receiving a flow of fluid from the fluid pressure regulator assembly, the first component having an output port having a complementary configuration to the first port, the second component having an input port having a complementary configuration to the fourth port, and means for maintaining the first component and the pressure regulator assembly in an orientation in which the output port and the first port are coupled in fluid tight engagement and the second component and the pressure regulator assembly in an orientation in which the input port and the fourth port are coupled in fluid tight engagement.

10. A fluid pressure regulator assembly including a body having a first passageway extending from a first port to a second port, a second passageway extending from a third port to a fourth port, a pressure regulator coupled between the second and third ports for controlling the pressure of fluid flowing from the second port to the third port, and a bypass valve, the body including a housing for the bypass valve, a third passageway extending from the first passageway to the housing, a fourth passageway extending from the housing to the second passageway, the bypass valve controlling flow from the first passageway through the third passageway and the fourth passageway to the second passageway in response to a bypass control signal coupled to the bypass valve.

11. A fluid regulating assembly including an assembly body providing a fluid entry passageway, a fluid exit passageway, a bypass valve communicating with the fluid entry and exit passageways, and a regulator-mounting portion including a fluid entry passageway exit port and a fluid exit passageway entry port, a fluid regulator including a regulator body defining an internal chamber having a diaphragm separating the chamber into a regulating fluid portion and a regulated fluid portion, the regulator body having a regulating fluid port in communication with the regulating fluid portion to receive a regulating fluid pressure signal, the regulator body having a regulated fluid inlet and a regulated fluid outlet in communication with the regulated fluid portion, the regulating fluid inlet being coupled with a source of regulating fluid, the regulated fluid inlet being coupled to the fluid entry passageway, and the regulated fluid outlet being coupled to the fluid exit passageway.

10021457-103001

12. The regulator assembly of claim 11 wherein the bypass valve has a first orientation in which it blocks fluid flow from the fluid entry passageway to the fluid exit passageway and a second orientation in which it does not block fluid flow from the fluid entry passageway to the fluid exit passageway.

5 13. The fluid regulating assembly of claim 12 wherein the bypass valve is coupled to a bypass signal source to receive from the bypass signal source a bypass signal to move the valve between the first and second orientations.

10 14. The fluid regulating assembly of claim 12 further including a seal to prevent fluid flow around the bypass valve and a vent passageway extending between a surface of the body and the bypass valve to indicate when the seal is leaking.

15 15. A bypass structure for a fluid pressure regulator of the type having a regulator inlet port and a regulator outlet port communicating in the regulator, the bypass structure including a body having a fluid entry passageway, a fluid exit passageway, a bypass passageway extending between the entry and exit passageways, a bypass valve positioned in the bypass passageway and movable between a first position to block fluid flow through the bypass passageway and a second position permitting fluid flow through the bypass passageway.

20 16. The bypass structure of claim 15 further including a control signal passageway in communication with the bypass valve and a bypass signal source coupled to the control signal passageway to move the bypass valve between the first and second positions.

25 17. The bypass structure of claim 15 wherein the bypass valve includes a bypass valve member and a seat, the bypass valve member and seat being relatively movable to move the bypass valve between the first position and the second position, and a flag coupled to the bypass valve member to indicate the condition of the bypass valve.

30 18. The bypass structure of claim 15 further including a seal to prevent fluid flow around the bypass valve and a vent passageway extending between a surface of the body and the bypass valve to indicate a condition of the seal.

19. The apparatus of claim 15 further including a first component for providing a flow of fluid to the bypass structure, and a second component for

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receiving a flow of fluid from the bypass structure, the fluid entry passageway including a first port, the fluid exit passageway including a second port, the first component having an output port having a complementary configuration to the first port, the second component having an input port having a complementary configuration to the second port, and means for maintaining the output port and the first port in fluid tight engagement and the input port and the second port in fluid tight engagement.

20. A fluid regulating assembly including a pressure regulator, a body including a fluid entry passageway communicating fluid from a fluid supply source to the pressure regulator, a fluid exit passageway communicating fluid from the pressure regulator to an exit port, and means for diverting a portion of the fluid from the pressure regulator.

21. The fluid regulating assembly of claim 20 wherein the diverting means has a first condition blocking fluid flow through the diverting means and a second condition permitting fluid flow through the diverting means.

~~22~~²³. The fluid regulating assembly of claim 21 further including means for signaling the diverting means to change between the first and second conditions.

~~23~~²⁴. The fluid regulating assembly of claim 21 further including means for indicating the condition of the diverting means.

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